

FRIEDMAN & BRUYA, INC.**ENVIRONMENTAL CHEMISTS**

Date of Report: July 24, 1991

Date Submitted: July 11, 1991

Project: 7238, METRO Split Sample, PO# M20767

**RESULTS OF ANALYSES OF THE WATER SAMPLES
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
METHOD 6010
Results Reported as mg/L (ppm)**

<u>Sample #</u>	<u>M20767A</u>	<u>M20767B</u>
<u>Analyte:</u>		
Arsenic	<0.06	<0.06
Cadmium	<0.05	<0.05
Chromium	1.1	0.22
Lead	<0.05	<0.05
Mercury	<0.05	0.21
Silver	<0.02	0.02
Copper	0.25	0.09
Nickel	0.95	0.14
Zinc	0.07	0.06

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Quality Assurance**

<u>Sample #</u>	<u>Method Blank</u>	<u>M20767A (Duplicate)</u>
<u>Analyte:</u>		
Arsenic	<0.06	<0.06
Cadmium	<0.05	<0.05
Chromium	<0.05	1.2
Lead	<0.05	<0.05
Mercury	<0.05	<0.05
Silver	<0.02	<0.02
Copper	<0.05	0.26
Nickel	<0.05	0.94
Zinc	<0.05	0.07

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**RESULTS OF ANALYSES OF THE WATER SAMPLES
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
METHOD 6010
Results Reported as % Recovery
Quality Assurance**

<u>Sample #</u>	<u>M20767A</u> <u>Matrix Spike</u> <u>% Recovery</u>	<u>M20767A</u> <u>Matrix Spike Duplicate</u> <u>% Recovery</u>	<u>Spike</u> <u>Level</u>
<u>Analyte:</u>			
Arsenic	79%	79%	10
Cadmium	85%	86%	5
Chromium	75%	82%	5
Lead	77%	77%	10
Mercury	89%	90%	10
Silver	120%	140%	2
Copper	66%	71%	5
Nickel	76%	75%	10
Zinc	87%	88%	5

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**RESULTS OF ANALYSES OF THE WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS
BY IR (EPA METHOD 418.1)
Results Reported as mg/L (ppm)**

<u>Sample #</u>	<u>Total Petroleum Hydrocarbons (ppm)</u>
M20767A	46
 <u>Quality Assurance</u>	
Method Blank	<10
M20767A (Duplicate)	53
M20767A (Matrix Spike) Percent Recovery	115%
M20767A (Matrix Spike Duplicate) Percent Recovery	120%
Sample Spiked at	63

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**RESULTS OF ANALYSES OF THE WATER SAMPLES
FOR FATS, OILS AND GREASES
BY IR (EPA METHOD 418.1)
Results Reported as mg/L (ppm)**

<u>Sample #</u>	<u>Fats, Oils & Greases</u> (ppm)
M20767A	110
 <u>Quality Assurance</u>	
Method Blank	<10
M20767A (Duplicate)	130

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**RESULTS OF ANALYSES OF THE WATER SAMPLES
FOR pH**

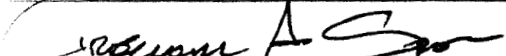
<u>Sample #</u>	<u>pH</u>
M20767A	10.0
M20767B	10.0

Quality Assurance

M20767A (Duplicate)	10.0
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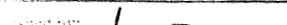

7 - mzp - A

Report To: _____
 Company ALASKAN COPPER & BRASS Contact GREEN SPEED
 Address P.O. BOX 3540
 City, State, Zip SEATTLE, WA. 98124
 Phone # (206) 623-5800 Date 7/12/91

SITE NO. 0208 7238	PROJECT NAME METRO SPLIT SAMPLE	PURCHASE ORDER # M20767
SAMPLERS (signature) 		PROJECT LOCATION 3200 6th AVE SOUTH
REMARKS		SAMPLE DISPOSAL INFORM. <input type="checkbox"/> Dispose after 30 days <input checked="" type="checkbox"/> Return Samples <input type="checkbox"/> Call for Instructions

SAMPLE #	Date/Time Sampled	Type of Sample	# of Jars	Lab Sample #	Analyses Requested
M20707 A	7/10/91	WATER	1	20949	As, Ag, Cd, Cr, Cu, Ni, Pb, Zn, TTO POLAR FATS, OIL, GREASE NONPOLAR FATS, OIL, GREASE
M20707 B	7/11/91	WATER	1	20950	As, Ag, Cd, Cr, Cu, Ni, Pb, Zn

7/13/91 MSP
 client says hold off on TTO
 DOGS held back
 7/14/91 MSP
 client says cancel TTO
 and turn in report
 40 CKR
 433.11
 4/3.02
 72
 7/22/91
 client says
 do PH on
 7/14/91

SIGNATURE	PRINT NAME	COMPANY	Date	Time
	GREG STEER	Aluminum Company	7/10/91	
	M.A. DANFORD	Friedman & Brunyn	7-10-91	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3008-B 16th Avenue West
Seattle, WA 98119
FAX: (206) 283-5044

July 24, 1991

Greg Speer, Project Leader
Alaskan Copper
628 South Hanford
Seattle, WA 98134

Dear Mr. Speer:

Enclosed are the results of the analyses of the samples submitted on July 11, 1991 from Project 7238, METRO Split Sample, PO# M20767.

We appreciate this opportunity to be of service to you on this project. If you have any questions regarding this material, or if you just want to discuss any aspect of your projects, please do not hesitate to contact me.

Sincerely,



Mark Z Perin, Chemist

MZP

Enclosures